Amendments to the Claims:

The listing of claims below will replace all prior versions, and the listings of claims in the application:

1. cancelled

2-22. previously cancelled

Please add new claims 23-44 as follows:

23. (new) Membrane-electrode assembly for electrochemical devices, comprising
- an ion-conducting membrane having a front side and rear side,
- a first catalyst layer and a first gas diffusion layer on the front side and
- a second catalyst layer and a second gas diffusion layer on the rear side,

wherein the first gas diffusion layer has smaller planar dimensions than the ion-conducting membrane and the second gas diffusion layer has essentially the same planar dimensions as the ion-conducting membrane.

24. (new) Membrane-electrode assembly according to Claim 23,wherein the catalyst layer on the front side and the catalyst layer on the rear side of the ion-conducting membrane have different planar dimensions.

25. (new) Membrane-electrode assembly according to Claim 23, wherein the catalyst layer on the front side and the catalyst layer on the rear side of the ion-conducting membrane have the same planar dimensions.

26. (new) Membrane-electrode assembly according to Claim 23, wherein the ion-conducting membrane has a surface which is not supported by the gas diffusion layer on the front side.

27. (new) Membrane-electrode assembly according to Claim 23, wherein the catalyst layers on the front side and on the rear side comprise catalysts containing precious metals and, if appropriate, ion-conducting materials.

28. (new) Membrane-electrode assembly according to Claim 23, wherein the ion-conducting membrane comprises organic polymers such as proton conducting perfluorinated polymeric sulphonic acid compounds, doped polybenzimidazoles, polyether ketones, polysulphones or ion-conducting ceramic materials and has a thickness of from 10 to 200 μm.

29. (new) Membrane-electrode assembly according to Claim 23, wherein the gas diffusion layers comprise porous, electrically conductive materials such as carbon fibre paper, carbon fibre nonwovens, woven carbon fibre fabrics, metal meshes, and metallized woven fabrics.

30. (new) Membrane-electrode assembly according to Claim 26, wherein the edge of the gas diffusion layers and the surface of the ion-conducting membrane which is not supported by the gas diffusion layer on the front side are enclosed by a sealing material.

31. (new) Membrane-electrode assembly according to Claim 30, wherein the sealing material additionally impregnates the edge region of the gas diffusion layers to a width of at least 0.5 mm.

32. (new) Membrane-electrode assembly according to Claim 30, wherein the sealing material comprises thermoplastic polymers selected from the group consisting of

polyethylenes, polypropylenes, polytetrafluoroethylenes, PVDF, polyesters, polyamides, polyamide elastomers, polyimides and polyurethanes, elastomers selected from the group consisting of silicones, silicone elastomers, EPDM, fluoroelastomers, perfluoroelastomers, chloroprene elastomers, fluorosilicone elastomers and/or thermoset polymers from the group consisting of epoxy resins, phenolic resins and cyanoacrylates.

33. (new) Membrane-electrode assembly according to Claim 30, wherein the sealing material is reinforced by chemically inert, electrically insulating inorganic materials.

34. (new) Membrane-electrode assembly according to Claim 30, wherein the sealing material is integrally joined to a further circumferential polymer frame.

35. (new) Membrane-electrode assembly according to Claim 30,wherein the sealing material comprises a plurality of layers of creep-resistant polymer materials which are joined both to one another and simultaneously to the membrane-electrode assembly by means of a layer of adhesive.

36. (new) Membrane-electrode assembly according to Claim 35, wherein the creep resistant materials are polymers having a glass transition temperature (Tg) above 100°C.

37. (new) Membrane-electrode assembly according to Claim 35, wherein the adhesive is a cold curing adhesive or a hot-curing adhesive selected from the group consisting of acrylates, cyanoacrylates, epoxy resins, EVA, polyethylene, and propylene.

38. (new) Process for producing a membrane-electrode assembly according to Claim 23, which comprises joining a catalyst-coated gas diffusion layer comprising the first catalyst layer and the first gas diffusion layer and a catalyst-coated gas diffusion layer comprising the second catalyst layer and the second gas diffusion layer, to the front side and rear side of the ion-conducting membrane, respectively.

39. (new) Process for producing a membrane-electrode assembly according to Claim 23, which comprises coating the front and rear sides of the ion-conducting membrane with the first and second catalyst layers, respectively, and joining the first and second gas diffusion layers, which are not coated with catalyst, to the front side and rear side, respectively, of the coated ion-conducting membrane.

40. (new) Process for producing a membrane-electrode assembly according to Claim 30, wherein the surface of the ion-conducting membrane which is not supported by a gas diffusion layer is brought into direct contact with the sealing material.

41. (new) Process for producing a membrane-electrode assembly according to Claim 23,wherein the membrane-electrode assembly is brought into contact with one or more prefabricated frames of sealing material and the regions of the membrane-electrode assembly and sealing material which are in direct contact are joined under pressure by means of an electric heating pulse.

42. (new) Process for producing a membrane-electrode assembly according to Claim 30, wherein curing of the sealing material is effected by means of increased pressure and/or elevated temperature or by contact with atmospheric moisture and/or by means of elevated temperature.

43. (new) Process for producing a membrane-electrode assembly according to Claim 34, wherein the bonding of the sealing material to the circumferential polymer frame is effected by means of heat-reactivateable polymers and curing takes place at an elevated temperature.

44. (new) A method for producing cell stacks for electrochemical devices, in particular for fuel cells, which comprises using the membrane-electrode assembly according to Claim 23.